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WEB-BASED STUDENT LEARNING: ACCOMMODATING CULTURAL DIVERSITY

Abstract

Many institutions worldwide are responding to emerging information and communication technologies by adopting web-based education and training. Within the context of the University of Southern Queensland (USQ), Australia, the effort to support web-based education and training focuses primarily on online pedagogy, which is seen to be at the heart of successful teaching and learning online. This paper briefly outlines a conceptual framework for student learning consisting of three models: the independent learner, the interactive learner and the collaborative learner. All three models need to be considered in an integrated manner when designing online instruction. The paper provides an analysis of the literature in order to determine the variables that influence learner diversity, with a particular focus on cultural diversity. It is suggested that the integration of models of student learning into web-based instructional design will accommodate learner diversity educators face in a global environment.

Key words: learner diversity; cultural diversity; instructional design; Internet; pedagogy; web-based education; models of learning

Designing for Diversity

The adoption of flexible learning methodologies has been a key initiative in many educational institutions in an attempt to adapt to the changing global education environment. In 1977, the University of Southern Queensland (USQ), Australia, presented itself as a viable alternative to traditional universities by offering distance education. Traditional distance education in Australia means the delivery of predominantly print-based, stand-alone packages to learners separated from the educational institution. USQ delivered distance education while continuing with classroom-based teaching, earning it a “dual mode” label. This experience in dual mode delivery positioned USQ, in the 1990s, to take advantage of possibilities created by information and communication technologies and the subsequent move to online delivery. In 1999, a major online initiative called *USQOnline* was introduced. This initiative enabled the delivery of multiple courses via the Internet to students worldwide, providing greater learning opportunities. This paper briefly outlines and builds on a conceptual framework for student learning consisting of three models: the independent learner, the interactive learner and the collaborative learner. The three models have been discussed in more detail in an earlier publication (Taylor et al., 2000) and are consistent with the essence of well-designed and well-developed instruction, particularly in a web-based environment. Because USQ has a very diverse student population representing sixty countries throughout the world, the paper then considers variables of learner diversity (particularly of a cultural nature) that can impact on the online learning experience and suggests how these models may help accommodate such diversity. As Scheel & Branch (1993) emphasise, the aim is to maintain the integrity of the collective identities of various cultures within a macro

society (in this case, an Australian university), thus acknowledging the diversities learners can bring to the learning environment.

Models of Student Learning

The independent model of learning is exemplified by “content-learner” interaction (Miller & Miller, 1999) or Paulsen’s (1995) one alone category in his pedagogical framework. The interactive learner model is analogous to Paulsen’s (1995) one to one and one to many pedagogical framework. This model maintains the interaction with the learning materials with the added feature of interactivity with peers, instructors and other experts. The collaborative learner model acknowledges the importance of co-construction of knowledge through collective learning and peer exchange. Paulsen refers to this as a many to many learning experience, with less of a focus on instructor contribution and greater emphasis on an active sharing among members of a group. USQ supports the assumption that designers need to consider all three models in an integrated manner when designing instructional environments. Specific program objectives may draw upon one model (e.g. collaborative model when teaching skills of teamwork) but generally speaking all three models should be addressed in well-designed instruction.

Online Teaching and Learning

Providing education at a distance has always presented challenges to the educator. Information and communication technologies have created new educational opportunities that impact upon traditional distance education models and theory, and challenge the independent learner model that lacks group interaction. At USQ, the promotion of interaction, collaboration and reflection using electronic discussion groups is a key design feature of online courses. Using electronic mail and computer conferencing as integral parts of the learning process enable instructors to bridge the aspects of distance education that have traditionally separated students and lecturers. This interaction is mainly through asynchronous (not at the same time) computer-mediated communication (CMC) which allows users to access discussion groups, in order to read and post messages, at any time convenient to their learning situation. Within the online environment, interaction and collaboration may occur between the teaching staff, students enrolled in the course and other experts in the field. USQ online pedagogy is also influenced significantly by the underlying theme of constructivism. In educational literature (Laurillard, 1993, Harasim, 1995, Eckel et al., 1999, Jonassen, 2000), it is argued that learning within a constructivist environment promotes meaningful learner engagement and critical, creative and complex thinking by learners. An important element of constructivist learning is communication and collaboration with others, thus creating a community of learners.

At USQ, current theories of instruction and learning (e.g. constructivism), ongoing research and emerging models of student learning form the basis for design and development decisions. In addition, because of the globalisation of learning, the design process for online teaching and learning must consider and accommodate the challenges of changing learner profiles reflecting increasing enrolments of students from diverse backgrounds. Designers need to be aware of how culture influences learning and understanding, interaction, communication and the interpretation of information. McLoughlin and Oliver (2000, p.8) observe that “by recognising that learning is culturally and socially contextualised, the design process becomes grounded and located within communities and individuals for whom the learning

materials were intended". The issue of diversity is much broader than just cultural and includes other variables such as prior knowledge and experience, age, gender, socio-economic status, and disabilities, among others. For the purposes of this paper, though, the focus will be on diversity in terms of culture, at the international, national, organisational or individual levels. The paper also indicates how the integration of the three models of student learning into web-based instructional design may accommodate this diversity.

Variables of Learner Diversity - Cultural Considerations

The use of the Internet as a delivery medium allows educators and learners to communicate in ways not previously possible in the history of distance education. A survey of the Distance Education On-line Symposium mailing list conducted by Kouki & Wright (1999) found that seventy-four percent of respondents agreed that their main reason for using the Internet was the ability to access and reach others anywhere and any time. Communication can be synchronous or asynchronous, one-to-one, one-to-many, and many-to-many with graphic and video capabilities becoming increasingly available. The communication capabilities of the Internet allow educators to construct teaching/learning environments that enable widely dispersed learners to individually and socially co-construct knowledge. USQ has wide experience in teaching international students. The *USQOnline* initiative has expanded this student base even further by utilizing flexibly delivered educational programs. As USQ units increasingly use online delivery and communication as teaching/learning strategies, the influence of cultural variables on the efficacy of online pedagogy emerges as an important educational issue.

Duarte & Snyder (1999, p.54) define culture as:

a set of learned mores, values, attitudes, and meanings that are shared by the members of a group. Culture can be viewed as the collective programming that separates one group of people from another. One way to look at culture is as the hidden "scripts" that people use to guide their behaviours.

Cultural differences are established in childhood, and these, coupled with life experiences, create the differences in behavior and thinking which identify a person's cultural background. Cultural factors can have a significant impact on a learning experience. Culture (like an iceberg) is often partially or totally hidden and can affect people's assumption, behaviours, and expectations about the entire learning experience including leadership practices, student/teacher interactions, and group dynamics (Duarte & Snyder, 1999). For instance, the web-based communication environment encourages learners to discuss and challenge ideas presented by authors and other learners, which may be considered inappropriate behaviour for students from some cultural backgrounds. According to Duarte & Snyder (1999, p. 67), "Being aware of and countering built-in biases is one of the biggest challenges" in developing instructional environments.

Considering the cultural impact on learning experiences is not a new concept. Collis (1997) observes that studies of the portability of educational software have been conducted for more than two decades. Entire books, journal issues and conference proceedings have been devoted to examining the impact of cultural diversity on the learning experience. A statement made in the lead up to the Cultural Attitudes Towards Technology and Communication (CATaC'00) conference held in Perth, Australia in July 2000 indicates that "computer mediated communication technologies

are neither culturally neutral nor communicatively transparent...diverse cultural attitudes towards technology and communication- those embedded in current technologies, and those shaping the beliefs and behaviours of potential users - often collide". A critical impetus for this paper was Kawachi's (2000, p.42) observation that "Western conceptions and approaches are not transferable across cultures and that global distance education providers need to become more culturally sensitised to individual differences". Cunningham et al. (1997, p.163) observe that there is a rising level of concern that both "exporting students and importing courses present a very real threat of students' loss of identity, culture and family values". Developing nations are now vetting their foreign trained graduates "in terms of relevance and adaptability of skills to national needs and objectives" (Anyanwu, 1998, p.2).

Duarte and Snyder (1999) suggest a framework consisting of dimensions of culture based on the work of Hofstede (1986), Hofstede and Bond (1988), and Hall (1976). This framework provides an excellent opportunity for examining learner diversity in a global environment. These dimensions include degrees of: individualism-collectivism, power distance, uncertainty avoidance, long-term and short-term, and context in a culture. Collis and Remmers (1997) have also determined several themes that need to be addressed when considering cross-cultural communication and interaction in web-based education. They are communication and interaction, language, content and purpose and representation form. A combination of these frameworks will be employed to examine how cultural characteristics - in terms of dimensions and themes, might impact on the learning experience in online education.

Individualism-Collectivism in Culture

It is generally agreed that there are fundamental differences between Eastern and Western cultures. Williams-Green et al. (1997, p. 5) posit that Western cultures tend to value "individualism", personal achievement, and independence and suggest that interactions are functionally based, specialised, and are deemed to be their inalienable right. Non-western cultures, conversely, tend to favour group cooperation, harmony with others and nature, and holistic thinking. They value "collectivism", have a strong identity with the group and tend to put the needs of the group before their own. They prefer not to be singled out for praise or reward and may prefer team-based rewards to individual recognition.

McLoughlin and Oliver (2000, p.7) who have worked extensively with indigenous Australian students reveal that "instructional design of educational programs must incorporate the skills and values of the community, [and] its cultural traditions...purely cognitive based approaches have had limited success while interactive, dialogic approaches equip learners with analytic and verbal skills". They also indicate the importance of the social, collaborative focus of learning, of a sense of place and belonging, and the need to create and include the indigenous perspective. Incorporating models of student learning (independent/interactive/collaborative) into the design of USQ online units recognises the need to provide alternate learning pathways to accommodate learner preference. As an example, learning environments can be designed that encourage a high level of interactivity as learners engage with materials, each other and instructors, followed by a more independent focus as learners are immersed in authentic assessment tasks that require them to address their own contexts. Learner feedback has indicated an appreciation of the recognition of individual differences and needs: "When I first viewed the comments of others and realised their depth of understanding...I suddenly realised how little understanding,

knowledge and experience I had in the field. I appreciate your flexibility in accommodating my strengths and weaknesses in terms of practical experience".

Power Distance in Culture

"Power distance" refers to the extent to which the less powerful members of the population expect and accept that power is distributed equally. China is a high "power-distance" country in which there is great respect for one's superiors, and the questioning of a superior is not considered to be appropriate behaviour (Duarte & Snyder, 1999). The online discussion group environment encourages learners to discuss and challenge ideas presented by authors and other students, which may be considered inappropriate behavior for students from some cultural backgrounds. Joo (1999) points out that people who come from societies where discipline and submission to authority is praised might feel uncomfortable taking initiatives, and accepting the scrutiny of peers. Members of high power-distance cultures may participate more freely with technologies that are asynchronous and allow anonymous input. This need may be addressed in online instructional settings by offering alternative learning pathways when designing assessment requirements. Learners may also be offered the option of preparing personal journals rather than participating in public forum debates.

Uncertainty Avoidance in a Culture

Individuals from cultures that have high "uncertainty avoidance" seek details about plans, desire closure, and prefer more predictable routines with everything outlined for them with distinct parameters defined. Those from cultures with low levels of uncertainty avoidance are more comfortable with ambiguous situations and do not have a strong need for defined rules, procedures and processes. Online pedagogical guidelines at USQ encourage clear parameters to be set by instructors in terms of expectations and requirements, e.g. clear guidelines for assessment including detailed marking criteria, and study schedules that provide suggested patterns of study.

Interactive and collaborative online activities can provide group support structures that some learners may require. In addition, instructors can choose to establish a strong personal communication focus (available via electronic mail) to be offered throughout the teaching event. Options may also exist for freedom of choice which enable learners to select topics for assessment and follow individual learning pathways and preferences.

Long Term and Short Term Cultures

Learners from "short-term" cultures (mostly English speaking cultures) may be more impatient and need more immediate reinforcement. "Long term" (e.g. Asian) cultures may be motivated by long-term success. An example is provided by a learner from Hong Kong who emailed an instructor with a question, and the statement, "Take your time, as there is no urgency at all".

Degree of Context in a Culture

The degree of context in a culture refers to how people perceive the importance of different cues in communication. People from "high-context" cultures may prefer more information-rich technologies - messages have little meaning without an understanding of the surrounding context (Duarte & Snyder, 1999). They may look for learning experiences that offer opportunities for the feeling of social presence and will need to feel trust and familiarity with others they communicate with. People from "low-context" cultures may prefer more asynchronous communications as the

message itself is sufficient. Provision of model answers and exemplary materials are ways of addressing those needs of learners from high-context cultures. Considering the context in terms of discipline background is also useful. People who come from backgrounds such as human resources or marketing tend to prefer more contextual information in communication than do people from information systems, engineering, and finance (Duarte & Snyder, 1999). Instructors and designers need to take these preferences into account when designing learning events that require communication with learners.

The importance of developing a positive, supportive and productive working environment and a focus on an open, friendly relationship with the learners is recognised at USQ as an essential pedagogical feature of online teaching. This concept is referred to as a “social presence” (Gunawardena & Zittle, 1997). In a study by Chen et al. (1999), mentors were used to guide novice pre-service teachers through reflective practice learning experiences. Chen et al. believed that “deep cultural sensitivity was elemental in the trust building that made possible rich and honest participation in the online reflective exchanges” (p.225). At USQ, the desire by some learners for an independent model of learning is also recognised and accommodated, if possible, in the design decisions.

Language

Within a culture, language is more than just a functional means of communication, more than a technical matter to be factored into a program of instruction (Chen et al., 1999). Human language reflects how individuals think, interact with each other and how they will approach learning tasks. Diversity of language is an important consideration when designing web-based learning environments. This extends beyond which language is the preferred mode of delivery. Diverse cultures brought together in a learning environment can give rise, for example, to questions regarding appropriate writing style, use of formality (or informality), or use of humour. Vocabulary and grammar can convey different levels of politeness in different languages.

Content, Purpose and Representational Form

Cultural understanding of technology needs to be incorporated into the design of web-based learning materials (McLoughlin, 1999). Chinese and Arabic written languages, for example, start from right to left and therefore all icons, images and texts should be right-aligned (Joo, 1999). Computer keyboards differ to accommodate different character sets, punctuation and symbols. Cultures sometimes have religious principles that cannot be violated, such as certain foods (accepted or taboo), icons and particular forbidden behaviours, e.g. the colour yellow, in most Western countries, means caution whereas in China it means wealth (Sellin & Winters, 1996). The designer must have some knowledge of how different cultures will respond to issues of layout of the graphical interface, images, symbols, colour and sound. Henderson (1996) mentions a study conducted in Africa where graphics used to depict body parts, such as talking heads and pointing fingers, were perceived by learners to be severed parts of the body.

Although it is impossible to be sensitive to all cultural variations, a raising of awareness is paramount when designing instruction for diverse learner characteristics. Smith and Smith (1999, p. 65) echo the concerns expressed by others (Cunningham et al. 1997; Mitchell 1997) that educational providers should avoid the “new colonialism in the provision of education and training online in a way that is insufficiently

sensitive to other cultures and the learning styles and preferences that are associated with those cultures". They feel that failure to take account of differences "runs the danger of being new colonialists who assume that the organisational, knowledge and belief structures that we develop in the English speaking West will transfer without adaptation to another culture" (p. 77).

Conclusion

The use of an electronic environment to provide learning experiences opens up new challenges in terms of teaching and learning. Coupled with this is the necessity to address the needs of an expanding and diverse pool of learners. Chen et al. (1999) observes that there is no such thing as a pure culture as cultures evolve and change over time. Thus, in our role as online educators, we can never feel we have solved all the problems or achieved all the answers. This paper has raised a number of issues in terms of accommodating the diverse needs of learners in a global environment, in particular, the need to clarify the participants' expectations of teaching and learning roles within the framework suggested by Duarte and Synder (1999). Attempting to accommodate cultural diversity in instructional design can be seen as naïve, and can easily be dismissed as a cost-ineffective design issue. The question might be raised, how can so many cultures and learning styles be addressed in our multicultural society?

Research is the key to the development, growth and future success of open and distance learning. Collis and Remmers (1997) and McLoughlin (1999) conclude that there is little in the way of research into cross-cultural web-based instructional design. Proposed areas for research when considering online student models and the accommodation of learner diversity include the impact of culture and communication on learner behaviours, ethical issues related to information and communication technologies, and investigating and trialling innovative online instructional design strategies. Researchers need to further explore the idea of online education challenging existing distance education theory, which traditionally has been focused on the independent learner. This needs to be redefined in terms of interactive and collaborative possibilities in a culturally diverse world. The challenge facing all education providers is to meet the needs of diverse learners in a global environment.

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